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REMARKS

Entry of this Amendment is proper because it narrows the issues on appeal and does not require further searching by the Examiner.

Claims 1-23 are all the claims presently pending in the application. Claim 10 has been amended to more particularly define the claimed invention.

While the claim amendments made herein may likely help to distinguish the invention over the prior art, Applicant's intention in making the amendments is for the purpose of particularly pointing out the invention, and not for the purpose of distinguishing the invention over the prior art, narrowing the claims, or for any statutory requirements of patentability. Further, notwithstanding any claim amendments made herein, Applicant's intent is to encompass equivalents of all claim elements, even if amended herein or later during prosecution.

Claims 1 and 15 stand rejected under 35 USC 112, second paragraph as being allegedly indefinite. Applicant notes that claims 1 and 15 were amended by the Amendment filed on January 27, 2009 (deleting the term "thin") to address the Examiner's concerns. Therefore, these claims are clear and not indefinite, and the Examiner is again respectfully requested to withdraw this rejection.

Claims 1-23 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated or alternatively unpatentable under 35 USC § 103(a) by Davis et al. (U. S. Pat. No. 3,753,470).

This rejection respectfully traversed in view of the following discussion.

I. THE CLAIMED INVENTION

An exemplary aspect of the claimed invention (e.g., as defined by claim 1) is directed to a transporting apparatus, installed in a given clean environment, for transporting a plate from a predetermined takeoff position to a processing chamber. The apparatus includes a pair of upright support members standing at a predetermined interval.

Importantly, the invention also includes at least one horizontal support table liftably cantilevered on the pair of upright support members, and lift driving means for lifting the horizontal support table vertically, and a robot placed on the horizontal support table and having horizontally rotating arms for taking up and transporting the plate (Application Figures 1-5; page 20, line 5-page 22, line 8). This may allow the invention to eliminate the

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need for a large power which is required conventionally (Application at page 4, lines 6-12).

Another exemplary aspect (e.g., as recited in claim 15) is directed to a transporting control method of a transporting apparatus, installed in a predetermined clean environment and having rotating arms and end effectors, for transporting a plate from a predetermined takeoff position to a processing chamber. The method includes based on position data of accessed position of the rotating arms and the end effectors, calculating a moving amount in a horizontal direction, a moving amount in a vertical direction and driving data of the rotating arms and the end effectors, moving a robot based on the moving amount in the horizontal direction and the moving amount in the vertical direction and driving the rotating arms and the end effectors based on the driving data, and reading from storing means deflection data of the rotating arms and the end effectors which are extended.

Importantly, this aspect also includes calculating compensation data for compensating a deflected amount based on the deflection data, and compensating the deflected amount based on the compensation data (Application at page 27, line 15-page 29, line 7).

II. THE ALLEGED PRIOR ART REFERENCE

The Examiner alleges that Davis teaches the claimed invention of claims 1-22. Applicant would submit, however, that Davis does not teach or suggest each and every element of the claimed invention.

In particular, Applicant would again point out that nowhere does Davis teach or suggest *"at least one horizontal support table liftably cantilevered on the pair of upright support members; lift driving means for lifting the horizontal support table vertically; and a robot placed on the horizontal support table and having horizontally rotating arms for taking up and transporting the plate"*, as recited in claim 1 (Application Figures 1-5; page 20, line 5-page 22, line 8), or *"calculating compensation data for compensating a deflected amount based on the deflection data, and compensating the deflected amount based on the compensation data"*, as recited for example, in claim 15 and similarly recited in claim 20 (Application at page 27, line 15-page 29, line 7).

Clearly, Davis does not teach or suggest these novel features.

Indeed, the Examiner on page 3 of the Office Action alleges that Davis teaches a pair of upright support members standing at a predetermined interval, referring Applicant to "Fig.

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5 and Fig. 6, element 15". However, element 15 in Davis is a robotic conveyor which Davis describes as including a mounting conveyor beam or rail 7 upon which a movable conveyor robot subassembly 5 is mounted and moves relative to the rail (Davis at col. 6, lines 28-34). Because the Examiner's allegation is so vague, Applicant is left to guess which part of the robotic conveyor 15 the Examiner is attempting to equate with the upright support members.

So, Applicant guesses that the Examiner is attempting to equate the rail 7 with the upright support members of the claimed invention. However, Applicant would point out that the claimed invention includes a PAIR of (i.e., two) upright support members. Therefore, it is completely unreasonable to equate the rail 7 in Davis with the PAIR of upright support members of the claimed invention.

Next, the Examiner alleges that Davis teaches at least one horizontal support table liftably cantilevered on the pair of upright support members, referring Applicant to col. 7, lines 49-56 and col. 15, lines 30-49. These passages are set forth below:

The carousel assembly further includes a plurality of carousel support arms 725 which extend outwardly and are arranged to provide four cantilevered beam portions which can be advantageously used to support wafers 80 and wafer carriers 79. As shown, the carousel support arms 725 connect in an overlapping square-shaped array to form a central square 726 which is overlaid with a carousel central support panel 727 (Davis at col. 7, lines 49-56).

The transfer implement 140 while moving along the first course of travel 171 cooperates with the respective engagement members 100 by receiving the respective engagement members in the individual apertures 152. As seen in FIG. 25, when the transfer implement 140 is located at the end of the first course 171, and at the beginning of the second course 172, the respective engagement members are located at the first end 153 of the individual apertures 152. As best understood by a comparison of FIGS. 5 and 6, movement of the transfer implement 141 along the second course 172 has the effect of urging the individual engagement members along the sides of the respective apertures 152, from the first end 153, to the second end 154 thereof. This movement of the engagement members 100 along the individual apertures 152 draws the engagement members 100 generally radially inwardly, thereby defining the paths of travel 130 which are substantially arcuate in shape (FIG. 23). It is also noteworthy that the apertures 152 are shaped to allow installation over the engagement members 100 for the entire range of positions which the engagement members can assume (Davis at col. 15, lines 30-49).

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Applicant notes that these passages describe a carousel assembly 720, a plurality of carousel support arms 725, wafers 80, wafer carriers 79, central square 726, transfer implement 140, the first course of travel 171, engagement members 100, apertures 152, the second course of travel 172, the first end 153 and second end 154 of the individual apertures 152, and paths of travel 130. None of these features could be confused with a "table". Thus, again, because the Examiner's allegation is so vague, Applicant is left to guess which feature described in these passages the Examiner is attempting to equate with the horizontal support table of the claimed invention.

So, Applicant guesses that the Examiner is attempting to equate the carousel support arms 725 with the horizontal support table. However, Applicant would point out that this is completely unreasonable because the Examiner is (presumably) attempting to equate the rail 7 with the pair of upright support members and the carousel support arms 725 are not liftably cantilevered on the rail 7. Instead, the carousel support arms 725 are included as part of the carousel assembly and "connect in an overlapping square-shaped array to form a central square" (Davis at col. 7, lines 52-55).

Next, the Examiner alleges that Davis teaches the "lift driving means" of the claimed invention, referring to col. 32, line 65 to col. 33, line 6 which recites:

The tram is powered along the defined path guide track by a suitable tram driver, such as a track magnetic drive in the form of linear magnetic motor 2163. Linear magnetic motor 2163 is most preferably a linear brushless direct current motor. Such a preferred tram driver uses a series of angled magnetic segments which magnetically interact with an electromagnet on the base of the robotic conveyor to propel the tram and attached mechanical arm up and down the defined path track (Davis at col. 32, line 65-col. 33, line 6).

Presumably, the Examiner is attempting to equate the linear magnetic motor 2163 with the lift driving means of the claimed invention. This is completely unreasonable.

In fact, the motor 2163 is used to power the tram along the path guide track which is "formed by upper and lower guide bars 2158 and 2159 which are mounted along the outward side of a track support member 2161 forming part of the frame" (Davis at col. 32, lines 54-55; Figure 45). Thus, the motor 2163 has nothing to do with the carousel support arms 725 which the Examiner attempts to equate with the horizontal support table. Moreover, the motor 263 clearly does not move any thing "vertically". Indeed, Applicant suspects that the

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Examiner's keyword search returned "up and down" from this passage in Davis and the Examiner confused this with the term "vertically". However, as clearly illustrated in Figure 45 of Davis, by "up and down the defined path track" Davis clearly does not mean that the motor 2163 moves anything vertically.

Next, the Examiner alleges that Davis teaches the "robot placed on the horizontal support table" of the claimed invention, referring to Figures 1-2, 33 and 45. However, in none of these drawings does Davis teach or suggest that anything is "placed on" the carousel support arms 725 which the Examiner attempts to equate with the horizontal support table of the claimed invention. Therefore, Davis certainly does not teach that a robot having horizontally (i.e., which may be construed as perpendicular to "vertically") rotating arms is placed on the carousel support arms 725.

Therefore, clearly, Davis does not teach or suggest the features of claim 1.

With respect to claims 15 (and similarly in claim 20), the Examiner on page 3 surprisingly attempts to rely on the same vague allegations that he made with respect to claim 1 to reject claim 15. However, claim 15 recites "*calculating compensation data for compensating a deflected amount based on the deflection data, and compensating the deflected amount based on the compensation data*", which is not recited in claim 1. Therefore, it is unclear to Applicant what feature in Davis the Examiner is relying on as allegedly teaching this feature of the claimed invention.

However, Applicant notes that on page 4 of the Office Action the Examiner alleges that Davis teaches deflection compensating means, referring to Figures 21-23 and col. 15, lines 50-67). However, Figures 21-23 have nothing to do with deflection compensation. Further, col. 15, lines 50-67 recites:

The article or object receiving assembly 63 carries or cradles the individual silicon wafers 180 in substantially the same orientation as the transfer implement 140. FIG. 27 shows that the object receiving assembly 63 passes through the gap 164 which is defined between the first and second arms 161 and 162 as the transfer implement 164 moves along the second course of travel 172. Once the plurality of wafers 180 are disposed in rested relation on the article receiving assembly 63, the transfer implement 140 moves along the third course of travel 173 out of the cavity 43. As will be seen by a study of FIG. 27, the movement of the individual retainer assemblies 80 along the paths of travel 130 between the first position 131 and second the position 132 orients the first

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longitudinally disposed members 121 in tangential, force engaging relation relative to the peripheral edge 181 of wafers 180. This effectively secures the individual wafers in substantially coaxial alignment relative to the axis of rotation of the rotor frame 20.

Clearly, this passage has nothing to do with compensating a deflected amount. Therefore, clearly nowhere in this passage (or anywhere else) does Davis teach or suggest calculating compensation data for compensating a deflected amount based on deflection data, and compensating the deflected amount based on the compensation data.

Therefore, Applicant would submit that Davis clearly does not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

III. OTHER EXEMPLARY ASPECTS OF THE CLAIMED INVENTION

Although the Examiner argues that Davis discloses a deflection compensating means and a displacement compensating means, Davis does not disclose or suggest a placing position detecting means, and furthermore does not disclose or suggest to compensate the deflected amount before and after being mounted.

In fact, regarding the differences between the transporting apparatus of the claimed invention and the member 15 of Davis, Applicant notes that an exemplary aspect of the claimed invention may include an upright support member which is fixed on a moving table (e.g., moving table 41; Figure 2). The cantilevered horizontal support table of the claimed invention may be moved upward and downward by means of a driving means for moving upward and downward installed inside thereof while maintaining the upright state without changing the posture (position) of the upright support member.

The member 15 in Davis, on the other hand, has a structure in which the engagement implement 440 is moved upward and downward by changing the posture of the member 15 (Applicant notes that the posture is not upright).

Further, regarding the cantilevered horizontal support table, Applicant notes that Davis discloses the carousel assembly 720 including carousel support arm 724. In the claimed invention, the horizontal support table may be liftably cantilevered on the pair of upright support members standing at a predetermined interval. However, in Davis, the

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carrousel assembly 720 rotates in the reference so as to be able to transact with the member 15. The reason thereof is that the member 15 cannot pivot in the horizontal plane. (Suppose, for example, if the transporting apparatus of the exemplary aspects of the claimed invention is incorporated in the apparatus of Davis, it would not be necessary to have the carrousel assembly. Thus, the direct access from the mechanism 800 to the work station 19 becomes possible, which is more compact and having fewer components than the apparatus of Davis).

Further, regarding the differences between the claimed invention and Davis, Applicant notes that since the apparatus of Davis transports the circular articles to be transported in the state to be vertically upright, the compensation of the position displacement between the article to be transported and the member 15 is not necessary as well as the detection of the displaced amount, as far as the member 440 has the configuration and function to guide the article to be transported into the appropriate position because all the article to be transported are properly positioned according to gravity.

However, in contrast to Davis, in the exemplary aspects of the claimed invention, an article to be transported may relates to a large scale glass thin base plate so that the article to be transported may be broken or damaged by the weight thereof when processed in the same manner as described in Davis (i.e., vertically upright). In addition, the processing apparatus and the cassettes in Davis are also made so as to be placed horizontally.

Thus, clearly, there is no detecting means to detect the position displaced amount in Davis. Furthermore, there is no deflection compensating means. Thus, it is highly possible that the article to be transported may collide with the cassettes or the processing apparatus.

IV. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-23, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

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The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Date: 7/31/09

Respectfully Submitted,




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CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that I am filing this Amendment by facsimile with the United States Patent and Trademark Office to Examiner Marc, McDieunel, Group Art Unit 3664 at fax number (571) 273-8300 this 31st day of July, 2009.



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